their prestorm mode of travel along asphalt roads. The situation was considered an emergency because no other means of access, such as bridge, causeway, or ferry, is available to the village. Accordingly, the U.S. Department of Homeland Security directed the Army Corps of Engineers to fill the new inlet. Once the inlet was filled, the state transportation department reconstructed the broken segment of highway.

Private property owners in the park also tried to restore prestorm conditions by reconstructing berms between their homes and the park beach, using the 2–4 feet (0.6–1.2 m) of sand that had washed onto their property. Unlike the case at many barrier islands, large berms are not natural to Cape Hatteras. In an effort to maintain barrier island dynamics on parklands, the park did not allow residents to use park beaches as a sand source for the berms, and required the berms to be built as far onto private property as possible.

The sheer magnitude of Hurricane Isabel's effects on the infrastructure along the barrier islands has heightened the awareness of state agencies and local communities of the need for environmentally sound, long-term transportation planning. Cape Hatteras National Seashore has long been involved with the Outer Banks Task Force, an interagency panel that has studied Highway 12 problems for 10 years. Spurred by the storm, the panel is finalizing its recommendations to guide the interagency response to any future inlets created by storms on the Outer Banks. If the results of these collaborative planning efforts can be implemented after future storms, community restoration actions may become more consistent with natural coastal processes. ■

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NPS**FACT**

In 2000 the National Park Service set a five-year goal under the Government Performance and Results Act (GPRA goal Ia1A) to restore **10.1% of 222,300 acres (90,032 ha), or 22,500 acres (9,113 ha)** of parklands disturbed by development or agriculture.* The Park Service is on course to meet the FY 2005 target date, with cumulative totals of **4,716 acres (1,190 ha)** restored as of **FY 2001, 8,656 acres** (3,469 ha) as of FY 2002, and 13,525 acres (5,478 ha) or 60% of the goal as of FY 2003.

**The goal is specific to disturbed lands restoration (i.e., disturbed by development or agriculture) and does not address restoration of fauna, control of invasive plants, and use of fire as a restoration tool. Causes of disturbance include facilities, roads, mines, dams, abandoned campgrounds, farming, grazing, timber harvest, and abandoned irrigation ditches. The goal is updated every three years to account for progress and changes in the total area being targeted for restoration.*

Interagency collaboration helps pinpoint Hurricane Isabel impacts

By Rebecca Beavers and Tim Smith

Several agencies collaborated in the aftermath of Hurricane Isabel to assess the storm's impacts on Cape Hatteras and Cape Lookout National Seashores on the North Carolina Outer Banks. Once the storm had made landfall in North Carolina, the National Oceanic and Atmospheric Administration (NOAA) flew the coast and deployed a new research digital aerial-photography system. The tool recorded coordinates associated with 1.2-foot-resolution digital images and aircraft positional and attitude data. In response to the need for rapid assessment of hurricane impacts, the USGS Rocky Mountain Mapping Center is developing a method to process poststorm imagery and make it available to land managers. Their technique uses the aircraft positional and attitude data to ortho-rectify or correct the aerial imagery through a batch process, saving many hours of processing time. The imagery will be made available to the public over the Internet. Users will be able to call up the images in mosaics corresponding to regions of interest.

The USGS Center for Coastal and Watershed Studies and NASA also collected pre- and poststorm EAARL (Experimental Advanced Airborne Research Lidar) data to analyze the impacts of the hurricane. The high level of detail in these topographic and ocean-floor data provides a way to quantify amounts of sediment moved by the storm and understand the geologic impacts in the national seashores. Maps produced for a new inlet area at Cape Hatteras in the days following the storm helped natural resource managers visualize the new shape of the park. ■

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